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EXAMINER

KYLE, MICHAEL J

ART UNIT	PAPER NUMBER
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3676

DATE MAILED: 03/12/2004

12

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/006,597

Applicant(s)

HILGERT, CHRISTOPH

Examiner

Michael J Kyle

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 December 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 17, 18, 20-27 and 29-32 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 29 is/are allowed.
- 6) ☒ Claim(s) 17, 18, 20-27 and 30-32 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. _____.
 - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>5, 9</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 17, 20, 28, and 30-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yoshida et al (U.S. Patent No. 5,582,415) in view of Jacobs (U.S. Patent No. 4,140,323) and Ueta (U.S. Patent No. 5,230,521). Yoshida et al discloses a flat gasket comprising at least one metal sheet (45) which is provided with a coating of an elastomer film (30) at least on sides facing outward in at least one sealing area and which has an edge area formed by the outer contour adjacent to at least one peripheral self contained cavity (shown in figure 17, area under bead 16). Yoshida et al further discloses the cavity to be enclosed by at least one bead (16) of the metal sheet (45) and a second metal sheet (44) bridging the bead. However, Yoshida et al does not disclose a cavity being completely filled with a hydraulic fluid. The examiner considers the two metal sheets (44, 45) to be permanently joined together because the stopper (46) appears to hold the two metal sheets together. However, to more clearly show two metal sheets permanently jointed together, the examiner relies on the teachings of Ueta.
3. Jacobs teaches a gasket having a cavity (34) that is completely filled with a hydraulic fluid (36) in order to prevent the embossment (around cavity 34) from flattening out and losing much of its intended sealing capacity. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Yoshida et al as taught by Jacobs in

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order to prevent the bead from flattening out and losing sealing capacity. Jacobs describes the filler (36) in column 3, lines 11-22, as being silicone rubber, which “will also tend to flow” (column 3, line 19). Because of this description, examiner considers the filler (36) to be fluid.

4. Ueta shows a metallic gasket with a cavity enclosed by at least one bead (3) of a first metal sheet (1-1) with a second metal sheet (1-2) bridging the bead. Ueta teaches the two metal sheets (1-1, 1-2) to be permanently jointed together at joint locations (8) to prevent local increases in pressure that are caused by stoppers, which helps maintain the roundness in bores (column 1, lines 48-61). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the Yoshida et al as taught by Ueta by replacing the stoppers of Yoshida et al with the joints of Ueta to prevent local increases in pressure and in turn, better maintain the roundness of the bore.

5. With respect to claim 20, Yoshida et al discloses that the metal sheet (45) and the second metal sheet (44) are joined in a fluid tight manner (column 5, lines 6-10). Yoshida et al states that coating layer (31), between the metal sheets, “can prevent coolant and hot combustion gas from leaking” (column 5, lines 9-10). The examiner considers this to be fluid tight.

6. With respect to claims 30-32, Yoshida et al discloses the cavity to be filled with a polymer material that is plastically or elastically deformable and that the polymer material is silicone. Yoshida et al also discloses at least two flat gaskets (figure 17).

7. Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Udagawa et al (U.S. Patent No. 5,054,795) in view of Yoshida et al and Jacobs. Udagawa et al discloses a metal sheet (33) with an edge area (34) formed by a cylinder bore, the edge area adjacent to at

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least one self contained cavity (37), wherein the cavity is formed by the metal sheet (33) being flanged back onto, and joined to itself in the edge area. The examiner considers the flanged portion (35) to be joined to the metal sheet (33) because it is in contact with the metal sheet. The contact is maintained by the plasticity of the metal gasket. Additionally, when the gasket is installed, it will be pressed between two surfaces, maintaining the flanged portion and metal sheet in a joined fashion. Udagawa et al does not disclose the metal sheet to be provided with an elastomer film on the sides facing outward from the cavity, or for the cavity to be completely filled with a hydraulic medium.

8. Yoshida et al teaches a metal sheet (45) with a cavity formed therein (16), the cavity provided with an elastomer film (30, 31) on the sides facing outward from the cavity so as make the sides facing outward from the cavity heat resistant and wear resistant (column 5, lines 8-9). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Udagawa et al as taught by Yoshida et al in order provide a heat and wear resistant surface.

9. Jacobs teaches a gasket having a cavity (34) that is completely filled with a hydraulic medium (36) in order to prevent the embossment (around cavity 34) from flattening out and losing much of its intended sealing capacity. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the cavity of Udagawa et al et al by completely filling it with a hydraulic medium as taught by Jacobs in order to prevent the bead from flattening out and losing sealing capacity by improving the resiliency of the cavity so that when a load it is removed the cavity will be more easily returned to it original shape.

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10. Claims 21-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yoshida et al in view of Jacobs and Ueta as applied to claim 17 above, and further in view of Maeda et al (U.S. Patent no. 6,145,847). Neither Yoshida et al, Jacobs, nor Ueta disclose the second metal sheet to have a second bead in the area of the first bead of the first metal sheet, the second bead having a different design from that of the first bead, or the second bead having a profile with a smaller cross section than the first bead.

11. Maeda et al teaches a second metal sheet (2) to have a second bead (5') in the area of the first bead (5), the second bead having a different design from that of the first bead, or the second bead having a profile with a smaller cross section than the first bead (figure 6) in order to enhance sealing performance on the side of the cylinder head in a controlled manner. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the second metal sheet of Yoshida et al, as taught by Maeda et al, in order to enhance sealing performance on the other side of the gasket in a controlled manner.

12. Claim 24 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yoshida et al in view of Jacobs and Ueta as applied to claim 17 above, and further in view of Pearlstein (U.S. Patent No. 4,428,593). Neither Yoshida et al, Jacobs, nor Ueta disclose the second metal sheet to have second bead in mirror image to the bead of the first metal sheet.

13. Pearlstein teaches a gasket with a second sheet having a second bead in mirror image to the bead of the first sheet, in order to enhance sealing performance on both sides of the gasket. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention

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was made to modify Yoshida et al, Jacobs, and Ueta as taught by Pearlstein in order to enhance sealing performance on both sides of the gasket.

14. Claims 25-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yoshida et al in view of Jacobs, Ueta, and Hiramatsu et al (U.S. Patent No. 6,135,459). Yoshida et al discloses a flat gasket comprising at least one metal sheet (45) which is provided with a coating of an elastomer film (30) at least on sides facing outward in at least one sealing area and which has an edge area formed by the outer contour adjacent to at least one peripheral self contained cavity (shown in figure 17, area under bead 16). Yoshida et al further discloses the cavity to be enclosed by at least one bead (16) of the metal sheet (45) and a second metal sheet (44) bridging the bead. However, Yoshida et al does not disclose a cavity being completely filled with a hydraulic fluid. The examiner considers the two metal sheets (44, 45) to be permanently joined together because the stopper (46) appears to hold the two metal sheets together. However, to more clearly show two metal sheets permanently jointed together, the examiner relies on the teachings of Ueta.

15. Additionally, Yoshida et al does not disclose a third metal sheet arranged between a first metal sheet and the second metal sheet, the third metal sheet included in a connection between the first and second metal sheets, the metal sheet and the second metal sheet defining a first portion of the cavity, the third metal sheet and the second metal sheet defining a second portion of the cavity or the cavities on both sides of the third metal sheet to be in hydraulic connection with one another. Yoshida et al also does not disclose the third metal sheet to have a third bead

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having a differently shaped profile, or that the first, second, or third beads are subdivided into at least two partial beads.

16. Jacobs teaches a gasket having a cavity (34) that is completely filled with a hydraulic fluid (36) in order to prevent the embossment (around cavity 34) from flattening out and losing much of its intended sealing capacity. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Yoshida et al as taught by Jacobs in order to prevent the bead from flattening out and losing sealing capacity. Jacobs described the filler (36) in column 3, lines 9-22, as being silicone rubber, which “will also tend to flow” (column 3, line 19). Because of this description, examiner considers the filler (36) to be a fluid.

17. Ueta shows a metallic gasket with a cavity enclosed by at least one bead (3) of a first metal sheet (1-1) with a second metal sheet (1-2) bridging the bead. Ueta teaches the two metal sheets (1-1, 1-2) to be permanently jointed together at joint locations (8) to prevent local increases in pressure that are caused by stoppers, which helps maintains the roundness in bores (column 1, lines 48-61). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the Yoshida et al as taught by Ueta by replacing the stoppers of Yoshida et al with the joints of Ueta to prevent local increases in pressure and in turn, better maintain the roundness of the bore.

18. Hiramatsu et al teaches a third metal sheet (4) arranged between a first metal sheet (2) and the second metal sheet (3), the third metal sheet included in a connection between the first and second metal sheets, the metal sheet and the second metal sheet defining a first portion of the cavity (portion above third sheet 4, and below bead 2), the third metal sheet and the second metal sheet defining a second portion of the cavity (portion below third sheet 4 and above bead 3, in

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figure 2) and the cavities on both sides of the third metal sheet to be in hydraulic connection with one another in order to restrict the total compression of the beads. The examiner notes that when the beads are filled with a hydraulic medium as taught by Jacobs, that a force acting on the first portion of the cavity will be transferred through the hydraulic medium through the third metal sheet and to the hydraulic medium of the second portion of the cavity. The examiner considers this to put the first and second portions into connection. Hiramatsu et al also teaches the third metal sheet to have a third bead having a differently shaped profile and that the first (6) and second (7) beads are subdivided into at least two partial beads (figure 2) in order to further enhance sealing performance. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Yoshida et al, Jacobs, and Ueta as taught by Hiramatsu et al in order to restrict the total compression of the beads and to enhance sealing performance.

Allowable Subject Matter

19. Claim 29 is allowed.

Response to Arguments

20. Applicant's arguments filed December 17, 2003, have been fully considered but they are not persuasive.

21. With respect to claim 17, applicant argues that none of Yoshida et al, Jacobs, and Ueta, disclose a bead completely filled with a hydraulic fluid. Jacobs is cited by the examiner as a teaching to completely fill a bead with a hydraulic medium. Jacobs described the filler (36) in column 3, lines 11-22). Jacobs state the filler can be silicone rubber, which "will also tend to

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flow” (column 3, lines 18-19). Because of the flowing property described by Jacobs, examiner asserts that the filler is a fluid.

22. With respect to claim 18, applicant argues that Udagawa et al fails to disclose the flange (35) being joined to the flat base portion. Applicant continues to state that Figure 3 of Udagawa et al does not a weld or any other connection, in regard to the contact between the flange (35) and the base portion (33). Examiner notes that claim 18 recites for the metal sheet to be flanged back and joined to itself. Additionally, Merriam-Webster’s Collegiate Dictionary, Tenth Edition, defines “join” or “joined” as “to put or bring into close association or relationship”. In Udagawa et al, the flange (35) is brought into close relationship with the flat base portion (33). Therefore, Udagawa et al, in combination with Yoshida et al and Jacobs, recites all of the limitations of claim 18.

23. With respect to claim 25, applicant argues that the combination of Yoshida et al, Jacobs, Ueta, and Hiramatsu et al, does not disclose a first portion and a second portion of a cavity on both sides of a third metal sheet to be in hydraulic connection with one another. Applicant also notes that examiner reference to “hydraulic communication” in the previous Office Action, is not the same as “hydraulic connection”, as claimed. Examiner notes error in referring the “connection” as “communication”, however such a change does change the grounds of rejection. The combination of references results in the cavities on both sides of metal sheet (3) of Hiramatsu et al being filled with the filler (36) of Jacobs. Examiner asserts that such an arrangement can be considered a hydraulic connection because when the beads of Hiramatsu et al are filled with a hydraulic medium as taught by Jacobs, a force acting on the first portion of the cavity will be transferred through the hydraulic medium through the third metal sheet and to

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the hydraulic medium of the second portion of the cavity. Examiner considers this a connection, as all elements are connected together in a unitary structure, and a force can be transferred from one portion of the cavity to another, via the hydraulic media.

24. Applicant further states the hydraulic connection of the instant application is achieved by a hole 16 in the third metal sheet, allowing the hydraulic media to be connected or exposed to each other via the hole. Examiner notes that hole in the third metal sheet to provide the hydraulic connection is not claimed by applicant. The combination of Yoshida et al, Jacobs, Ueta, and Hiramatsu et al, recite all of the limitations currently presented in claim 25.

25. Applicant's arguments regarding dependent claims 20-24, 26-27, and 30-32, all rely on the arguments applicant presented for independent claims 17, 18, and 25. These arguments have been addressed above.

Conclusion

26. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

27. A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

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however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

28. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael J Kyle whose telephone number is 703-305-3614. The examiner can normally be reached on Monday - Friday, 8:30 am - 5:00 pm.

29. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Anthony Knight can be reached on 703-308-3179. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

30. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

mk


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